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ABSTRACT

A program was conducted during the Spring semester, 1985, in the San Antonio area to place high school juniors and seniors from three high schools in the Edgewood Independent School District in three-month interships in high-technology industries. Students traveled to their training locations on school-provided transportation on Mondays through Thursdays from approximately noon to 4:30 p.m. On Fridays, students attended a three-hour classroom session. Students were evaluated by industry training supervisors every six weeks. Students successfully completing the session received one and one-half credits toward graduation requirements. Evaluation of the program showed that all connected with it thought it had been successful. At least 70 percent of the industrial trainers rated it highly, while most of the others were at least somewhat pleased. Suggestions were made that a full-time coordinator be hired, that more time be allowed for finding student placements and for students to take computer literacy and basic electronics courses before beginning the internships, and that efforts be continued to articulate the program with area postsecondary institutions. (KC)

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HIGH TECHNOLOGY INTERNSHIP RESEARCH PROJECT

Final Report

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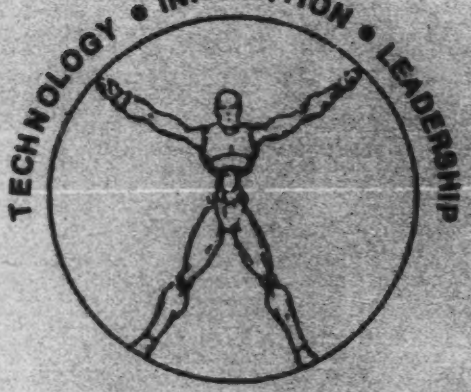

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San Antonio, Texas

June, 1985

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FINAL REPORT

HIGH TECHNOLOGY INTERNSHIP

AT THE SECONDARY LEVEL

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Sponsored Cooperatively by
Division of Occupational Research and Development
Department of Occupational Education and Technology
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and

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May 31, 1985

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INTRODUCTION

This report covers the Edgewood Independent School District High Technology Internship Program for Spring Semester of School Year 1984-1985.

GOAL

Investigate the feasibility, suitability and acceptability of providing selected high school juniors and seniors exploratory training opportunities in the high technology careers through placement in training locations within local industries.

OBJECTIVES

1. Develop a secondary program which will offer individualized instruction in High Technology skills through cooperative efforts with industry.

2. Develop articulation with post-secondary institutions to offer the option of open entry and exit levels into advanced training opportunities.

3. Develop a program to determine appropriate internship teacher/coordinator qualifications.

PROCEDURE

This was a cooperative program between Edgewood School District (Edgewood, Memorial, and J.F. Kennedy High Schools) and industry. Selected students from the three schools were placed in high technology training environments where they followed modified on-the-job training procedures: ie., provide students the opportunity to acquire new information, concepts, techniques and procedures; complete a period of over the shoulder observation; trial and error hands-on learning and supervised production; then accomplish enough minimally supervised production to ensure the learning transition is completed. (NOTE: Minimally supervised production would not normally exceed 1/3 of the training time). Training procedures followed a broad based training outline shown on the reverse side of each individualized training agreement.

Training with industry began on or about February 12, 1985. Due to the late notification of a mid-year start date, time did not allow teaching of preparatory classes in computer literacy or basic electronics. Students were placed based upon courses completed in their normal high school curriculum, interest inventories, and aptitude tests. Students maintained descriptive and comprehensive notebooks covering specific details of their training as well as materials from activities completed in the classroom. Students traveled to their training locations on school provided transportation, purchased from Texas Limousine Service, on Mondays through Thursdays from 12:05 p.m. to approximately 4:30 p.m. Students were not paid. On Fridays, students attended a three hour classroom block of instruction. Class time was used to complete student notebooks, discuss training activities, counsel students on problem areas, and complete related instruction using the Industrial Core Curriculum as a guide. Training ended May 16, 1985. Training was closely monitored by the High

Technology Program Manager at J.F. Kennedy High School.

Students successfully completing the semester of training received 1½ credits toward graduation requirements. Industry training supervisors evaluated each student each six weeks. Students completed student critiques at the end of each six weeks. Industry training supervisors completed a program evaluation instrument at the completion of the program. Advisory Committee members and administrators completed a program evaluation instrument at the end of the program.

Funds authorized for this program were not comingled with other programs.

RESULTS

1. Preliminary program activities were started December 12, 1984.

2. Selection of students and assignments to class were completed by January 25, 1985.

3. Students started internship training with industry on February 12, 1985. (One late entry student started on February 19, 1985). Training continued until May 16, 1985.

4. Student program evaluation, post-secondary educational opportunity counseling, and final testing were accomplished during the remainder of the semester.

5. Comparison was made between training outlines and training received by each student.

6. Evaluation instruments were used to evaluate student performance each six weeks.

7. Student critiques of the program were completed each six weeks.

8. Articulation with local post-secondary institutions was initiated. (San Antonio Community College, St. Philips College, and Texas A & M Extension).

9. Communication was established with numerous high technology industries in the San Antonio Area.

10. A High Technology Advisory Committee was established to provide guidance.

11. Curriculum for class instruction followed a modified version of the Judson Independent School District outline using the Industrial Core Curriculum as a guide. (Time constraints prohibited teaching of prerequisite courses in electronics and computer literacy).

12. Individual training outlines were developed for all skills in which students were placed for training.

13. A competency profile was developed to accomodate the aspects and objectives of the High Technology Internship Program.

14. A publicity pamphlet and an open letter to industry were developed to serve as initial contact instruments. (The Judson Independent School District pamphlet was modified for use with their approval).

15. High technology staff qualifications were verified.

16. Evaluation instruments for supervisors, administrators, and students were developed and used to evaluate the program.

17. An analysis of accessibility of special needs students was made.

EVALUATION

The general consensus of persons involved with the High Technology Internship Program is that it met its goals and objectives successfully. A program of this type is effective in secondary schools but should be a full year program in order for the students to gain maximum benefit from the internship training. Additionally, the program should be established for senior students who are more mature, and who have completed more of their academic program including prerequisite courses that relate to their choice of training area.

The program started with 24 students consisting of 10 juniors and 14 seniors. Twenty-three proved they were suitable candidates for the program through their demonstration of a high level of interest and motivation. One student was removed from the program because he developed a lack of interest and an attitude problem. Industries expressed satisfaction with the program and our students expressed enthusiasm and satisfaction with the results of their training.

With a mid-year start date, time was not available to provide prerequisite training in basic electronics and/or computer literacy. Some students were placed based upon courses completed in computer math, accounting or electronics. However, some students had not completed courses that would enhance their training and this slowed their progress and placed an additional workload on the training supervisors. Nineteen percent of the training supervisors stated that students were not adequately prepared for high tech training. These comments related to the need for an understanding of basic electronics and/or computer literacy.

Training outlines were viewed as appropriate and comprehensive by 71.4% of the training supervisors. In other cases supervisors stated that changes will be made next year to

refine the outlines. In all cases the training supervisors stated the skill achieved by the student was worthy of the time and expense of the training and all students considered their training as a valuable experience.

Coordinator relationships and contact were viewed as effective by 90.5% of the supervisors. One supervisor felt there may not have been too much contact because of the "short program". In 80.9% of the cases training supervisors felt program objectives were achieved and in 19.1% of the cases they felt the objectives were achieved in part. Eighty-seven percent of the students stated that if they had it to do over again they would enroll in this program. Thirteen percent, representing three junior students, stated they cannot enroll in the program next year because of other academic requirements. Of the thirteen graduating seniors 70%, or nine students, stated they will enroll in post-secondary education in a high tech field. Fifteen percent, or two students stated they need to work before they can afford to go to school and another two students will pursue post-secondary education in fields other than high technology.

The advisory committee members felt they understood and would not change the goals and objectives of the program. They viewed the composition of the committee as about right and felt they were able to play a meaningful role as members. They agreed with the frequency and content of meetings.

Some suggestions were made by committee members for improvement of the program. Feelings were strong that a student load of 25-30 was about right. They suggested that good follow-up with sponsors, students, and counselors is a must and that pre-course training in basic electronics and/or computer literacy enhances the students success in the program. Strong feelings were expressed that as the program grows cooperation between participating school districts is needed in the area

of sponsor search, student load, and student placement.

Lauditory comments about the excellence of the program and congratulatory statements about the success of the Edgewood Independent School District High Technology Internship program were included by some members.

Because of the time and distance involved in dealing with business management at the levels necessary to establish this type of program it is suggested that schools or districts assign a full time program manager as early as four months prior to enrollment of students. Industries respond favorably and enthusiastically to programs such as this, however the need to identify cooperating industries and then locate the specific high tech training stations and provide prerequisite training in basic electronics and/or computer literacy is very time consuming.

Articulation in the San Antonio area is an on-going process and much future work is needed in this area. Contact with post-secondary institutions indicates that they are participating in committee activities aimed at overall articulation and will include this program in that process.

Contact with the District Special Education Department and review of special needs students indicates that students who meet the selection criteria of this program can be accepted. If a student requires special transportation due to a physical handicap, additional funding would need to be provided by the school district.

Related instruction in the classroom was provided using the Industrial Core curriculum as a guide. An outline of the curriculum is a product of our test program and is submitted under a separate cover.

Review of tasks and duties of the High Technology Internship Program Manager shows that a majority of time and effort is expended in the areas of management of the program rather than teaching in the classroom. Persons selected as program managers need to possess a bachelors degree, experience with high technology industries, a knowledge of business and management, a sound background in human relations, and the willingness to spend extra effort and personal time to manage the program.

In summary, the success of this program was only possible through the combined enthusiastic support and assistance of the Superintendent, the cooperating industries, the district administration, the Advisory Committee, and the students. Special gratitude is in order for the outside assistance of the Vocational Director and the High Technology Internship Program Manager of the Judson Independent School District for their willingness to provide counsel and assistance.

CONCLUSIONS

1. The "Partnership in Education" concept is valid and applicable to high technology training in secondary schools.

2. Industry and government become willing participants and will cooperate with school systems in the educational process when training students in the high technology areas.

3. Interested students who are properly motivated and prepared for training with industry in the high technology careers can obtain maximum benefits from a program such as this.

4. High technology internship training can motivate and attract students to pursue careers in the high technology fields.

5. Approximately four months lead time work, prior to student enrollment, is needed by a full-time program manager to be effective in starting a high technology internship program in a school.

6. Articulation with post-secondary institutions is possible and can be accomplished.

7. To effectively implement and conduct a continuing High Technology Internship Program the need exists for continued support of the school administration from directors through the academic and vocational counselors as well as other teachers.

8. Program Managers (Teacher/Coordinators) must be carefully selected due to the nature of the activities performed and the need to devote many additional hours from personal time.

9. The Industrial Core Curriculum can be used as a guide for classroom related instruction. Some modification and supplemental information is needed. Additionally, preprequisite training in basic electronics and/or computer literacy is needed. A curriculum outline is a product of this report and is submitted under separate cover.

10. Special needs students who meet the selection criteria for the program can be enrolled. Costs for special needs such as transportation would need to be paid by the school district.

BODY OF REPORT

PROBLEM SYNOPSIS

In December, 1984, the Texas Education Agency informed the Edgewood Independent School District that possible approval would be given to the district proposal for development of a secondary High Technology Internship Program modeled after the program being conducted by the Judson Independent School District. The approval was subsequently granted.

The program was to investigate the feasibility, suitability, and acceptability of providing selected high school juniors and seniors exploratory training opportunities in the high technology careers. Students were to be placed with local high technology industries for training during the spring semester of the 1984-1985 school year.

To accomplish this, much assistance and information was available from the Judson Independent School District. Their program manager provided personal contact and assistance in addition to the information in the August 1984 Final Report of their High Technology Internship Research Project. High tech skills, program information, and identification of possible training locations were available through their activities in this area.

GOAL AND OBJECTIVES

GOAL

Investigate the feasibility, suitability and acceptability of providing selected high school juniors and seniors exploratory training opportunities in the high technology careers through placement in training locations within local industries.

OBJECTIVES

1. Develop a secondary program which will offer individualized instruction in high technology skills through cooperative efforts with industry.

2. Develop articulation with post-secondary institutions to offer the option of open entry and exit levels into advanced training opportunities.

3. Develop a program to determine appropriate internship/ teacher coordinator qualifications.

DESCRIPTION AND PROCEDURES

On December 7, 1984 this district was informed that our proposal for a High Technology Internship Program for Spring Semester 1985 might be approved. On December 12 1984 one of the Industrial Cooperative Training Coordinators was identified as the High Technology Internship Program Manager. Early contact with the Program Manager of Judson Independent School District was very beneficial for acquisition of information and materials which helped significantly in planning and implementing our program.

Without a firm decision from Texas Education Agency, it was necessary for the program manager to continue his fulltime teaching and coordination activities of ICT and CVAE during the period from December 12, 1984 through January 23, 1985. During this time an open letter to industry was developed and sent or delivered to 16 local industries involved in high technology activities. Industries were personally visited and their staffs were briefed on the program. The primary instrument used was a high technology internship informational pamphlet "The Future is Here". (Developed by Judson School District and adapted to our program with their consent.)(See Appendix A and A-1).

By January 23, 1985, six training locations had been identified with the possibility of placing 34 students in various high tech fields. During this period counselors at the three district high schools had identified approximately 27 students as likely candidates for the program. Additionally, continued effort was devoted toward contact with industries that had the capability for future participation in high tech training of students. (See Appendix B).

A target date of February 12, 1985, was set to start students in training with industry. Twenty-three students were assigned to the program on January 25, 1985 to participate in

high tech classroom activities for three hours per day at John F. Kennedy High School. From this time until February 12, 1985 the students completed blocks of instruction in Orientation to Vocational Education, Industrial Safety, Job Applications and Interviews, and Human Relations using the Industrial Core Curriculum as a guide. Class time was also used to visit the Judson High Tech class and provide individual and group counseling to help students make their final selection of training fields and locations. Assistance and/or reinforcement was provided to the students by giving information about career fields and industries, reviewing student grades and subjects completed, and discussing aptitude test and interest inventory results. During this time transportation requirements were established with the lowest cost company, Texas Limousine service.

On February 12, 1985, 23 students attended their first day of internship training at six different locations; six at Data Point Corporation, nine at Fairchild Aircraft Corporation, three at Valero Energy Corporation, three at Brooks Air Force Base Aerospace Medical Center and two at the U.S. Air Force Wilford Hall Medical Center. An additional late entry student was placed with Valero Energy Corporation on February 19, 1985, bringing total student enrollment to 24. (See Appendix C for breakout of student placement).

Students attended internship training with industry Monday through Thursday for approximately three hours per day and were trained according to individualized training outlines which are agreements between the industry, student, parent, and school district. (See Appendix D for examples). Each Friday students attended class for three hours. During this time students recorded daily training activities in their notebooks, received instruction in related information following the Industrial Core Curriculum as a guide, and discussed high

technology information from current newspapers and periodicals. Time was also used to counsel students, resolve problems, and provide information concerning post-secondary educational opportunities.

Instruments were developed for program evaluation using Judson Independent School District materials as a guide. Training supervisors evaluated their students each six weeks. (See Appendix E). Students completed a program critique at the end of each six weeks. (See Appendix F). At the end of training overall program evaluations were completed by the training supervisors, program administrators, and advisory committee members. (See Appendix G, H, and I respectively).

An advisory committee was formed in February consisting of members from industries training students, the educational community, and some members of industries that have a potential to train students next year. Three meetings were planned for the semester, the first of which was held in February, the second in April, and the third in May. (See Appendix J for Minutes of Meetings, and Appendix K Listing of Membership).

One of the 24 students had to be removed from training as a Bio-Medical Maintenance Technician at Wilford Hall Medical Center on April 9, 1985, due to discontent and conflicts in his high tech area and the program in general. Because of the resulting attitude and the problems he created at the training station, removal from the program was necessary.

The High Technology Internship Program Manager took attendance each day of training and coordinated the daily transportation of students to and from their training stations. Continuous coordination with industry was conducted to check student progress, develop and review training outlines, obtain training supervisor evaluations, and to resolve problems. Additionally, contacts with potential industrial participants for a continued a program were made and followed up on. Due

to the one semester program much work and activity that would normally take place over a school year was condensed into one half the usual time period. Examples: Development of training stations, development of training outlines, establishement of advisory committee, developing and implementing transportation, and coordinating initial adjustment and individual student needs at the training stations. Also the related information curriculum needed to be modified because it is established for a full school year program. This coupled with the meetings and time demands of a test program impacted on other necessary functions such as publicity of the program and recruitment for next school year.

Training with industry stopped on May 16, 1985. The remaining days of the school year were used to complete related instruction, student critiques, student follow-up forms, student counseling, and to comply with the district final exam schedule.

RESULTS

1. Preliminary program activities were started December 12, 1984.

2. Selection of students and assignment to class were completed by January 25, 1985.

3. Students started internship training with industry on Febuary 12, 1985. (One late entry student started on February 19, 1985). Training continued until May 16, 1985.

4. Student program evaluation, post-secondary educational opportunity counseling, and final testing were accomplished during the remainder of the semester.

5. Comparison was made between training outlines and training received by each student.

6. Evaluation instruments were used to evaluate student performance each six weeks. (Appendix E)

7. Student critiques of the program were completed each six weeks. (Appendix F)

8. Articulation with local post-secondary institutions was initiated. (San Antonio Community College, St. Philips college, and Texas A&M Extension).

9. Communication was established with numerous high technology industries in the San Antonio Area. (Appendix B)

10. A High Technology Advisory Committee was established to provide guidance. (Appendix J)

11. Curriculum for class instruction followed a modified version of the Judson Independent School District outline using the Industrial Core Curriculum as a guide. (Time constraints prohibited teaching of prerequisite courses in electronics and computer literacy). (Under Separate Cover)

12. Individual training outlines were developed for all skills in which students were placed for training. (Appendix D)

13. A competency profile was developed to accomodate the aspects and objectives of the High Technology Internship Program. (Appendix P)

14. A publicity pamphlet and an open letter to industry were developed to serve as initial contact instruments. (The Judson Independent School District pamphlet was modified for use with their approval). (Appendix A, A-1)

15. High technology staff qualifications were verified. (Appendix N, N-1).

16. Evaluation instruments for supervisors, administrators, and students were developed and used to evaluate the program. (Appendix G. H, I & L)

17. An analysis of accessibility of special needs students was made.

EVALUATION PROCEDURES AND FINDINGS

The general consensus of persons involved with the High Technology Internship Program is that it met its goals and objectives successfully.

A program of this type is effective in secondary schools but should be a full year program to allow sufficient time for students to obtain maximum benefit from the training. Additionally, the program should be established for senior students who are more mature and have had the opportunity to complete more of their academic program including prerequisite courses that relate to the high technology areas.

Of the 24 students in our program, consisting of 10 juniors and 14 seniors, 23 have proven they were suitable candidates for the program. They demonstrated a high level of interest in the program and the motivation necessary to benefit from the training. One student was removed from the program because he lost interest and developed an attitude that was not conductive to good relationships with the technicians at the training station. This student learned that the Bio-Medical Equipment Repair field was not what he would like for a career.

Cooperating industries expressed a good deal of satisfaction in training our students. Overall, the program has had a positive impact on our students and they have expressed enthusiasam and satisfaction with the results of their training

experiences.

The mid-year start date with very little lead time prohibited the teaching of prerequisite courses in electronics and computer literacy. Our experience shows that students were able to benefit from the training when other related courses in their backgrounds such as computer math, accounting or electronics had been completed by the student. However, a lack of prerequisite courses slows student progress and places additional work on the training supervisors. Training supervisors were aware of the students' status at the time of placement. Some training supervisors stated they could vary their training to start at the students level of understanding. In all cases, they felt a higher level of skill, knowledge, and exposure could be achieved by students who possess a basic understanding of electronics and/or computer literacy. In the supervisors program evaluation 19.05% stated students academic preparation was not adequate to meet the high technology training requirements. Another 19.05% stated students academic preparation for high technology training was partially adequate. Supervisor comments indicated that a need for formal prerequisite training in basic electronics and/or computer literacy is necessary for maximum student benefit from high technology training in these fields. The High Technology Internship Program creates

a need for school districts to establish courses in basic electronics and computer literacy as required or elective courses for advanced students. These course offerings are necessary for students to gain the most from training with industry under a High Technology Internship Program.

Training outlines were viewed as appropriate and comprehensive by 71.4% of the training supervisors. Supervisors stated in 28.6% of the cases that changes will be made next year to refine the outlines, or that the outline was two comprehensive for a one semester program but would be appropriate for a years program. Additionally, this 28.6% stated they did not completely follow the training outline, however, students felt their training progressed according to the training outline in 91.3% of the cases.

In all cases, 100%, the training supervisor felt the skill achieved by the student was worthy of the time and expense of the training. All students viewed their training as better than school classroom training and all considered the high tech training as a valuable experience. In 85.7% of the cases supervisors felt students were totally satisfied with their training and in 14.3% of the cases they were partially satisfied. In all cases students stated they got along well with their training supervisors. In 85.7% of the cases supervisors stated they were satisfied with the quality of their

students. Fourteen point three percent stated they were partially satisfied. This related to three supervisors who commented that one student needed more motivation and two students needed basic courses in electronics/computer literacy.

Coordinator relationships and contact were viewed as effective by 90.5% of the supervisors while 9.5% (1 Supervisor) stated in part, "Not too much contact, could have been due to short program." Seventy-six point two percent felt program goals were achieved and 23.8% felt they were partially achieved with comments that one semester is too short, and our section was not equipped to train in all areas--location should be changed to operations.

In 80.9% of the cases supervisors felt program objectives were met and in 19.1% of the cases they felt they were achieved in part. Seventy percent of the students felt nothing in the program should be changed while 30% recommended that some change was needed to provide more timely transportation. Eighty-seven percent of the students stated that if they had it to do over again they would enroll in High Tech. Thirteen percent, representing three junior student, commented that they cannot enroll in the program next year because of other academic requirements.

Of the thirteen graduating seniors 70%, or nine students, stated they will enroll in post secondary education in a high

tech field. Fifteen percent, or 2 students, stated they need to work before they can afford to go to school and another 15% stated they would enroll in post secondary school but will pursue a field other than high tech. (See Appendix L, Student Program Evaluation.)

The High Technology Internship Advisory Committee membership evaluated the committee activities as well as the High Technology Internship Program. Generally, comments indicated the goals and objectives of the program were successfully accomplished. All responding members indicated that they understood the goals and objectives of the program. Comments indicated that the goals and objectives were well defined, however one member suggested that long range goals be defined more clearly and another suggested recruitment of the "best and brightest" students. Thirteen of the 14 members indicated that they would make no changes to the goals and objectives while one suggested an administrative change in relation to student selection. (See Items 1 & 2, Appendix M)

All members felt the advisory committee composition was about right yet some indicated that they would like to see the school counselors and aboard member involved. All agreed with the frequency and content of the meetings, however some suggestions were made relative to the location of meetings. Additionally, one commented that agendas

were detailed and followed which saved time. Thirteen of fourteen members felt they were able to play a meaningful role as members of the committee. One stated yes, but he sensed "flag waving and lip service paid to the program" and another stated he was unable to attend all meetings because of schedule conflicts. (See Items 3, 4, & 5, Appendix M)

Some suggestions were made for improvement of the program. Comments suggested that the number of cooperating industries be increased, and that juniors be taken on bus tours of the work sites to see and talk with the students on site. Some caution was given to not expand too rapidly, that 25-30 students appears to be about right. It was suggested that good follow-up be maintained with sponsors, students, and counselors and that critiques are good feedback to all concerned. Suggestions were also made that in the selection of students pre-course preparation is an important key to the success of the program. (See Items 6a, b, c, & d, Appendix M)

Comments indicated the need for continued cooperation between schools in the area of sponsor search, student load and student placement as the program grows to keep the sponsor out of deciding how many students to take from what schools. More work and activity is needed in the area of articulation

with post-secondary institutions, basically get them involved in the areas of technical assistance, financial aid possibilities, and meetings. (See Items 6e and f, Appendix M)

Under other comments there were lauditory statements about the excellence of the program and some congratulatory statements about the success of the Edgewood Independent School District High Technology Internship program. (See Item 6j, Appendix M)

The administrator evaluation of the program indicates that the High Technology Internship program was a success, however some areas can be improved. Pre-course training in basic electronics and/or computer literacy is a must and will be conducted for future students. More counseling and refinement is needed in the student selection process to be sure that only the most interested and motivated students are selected and that these students have some intention toward a career in high technology. Transportation alternatives need to be looked at for next year. Either provide dedicated district transportation or select commercial transportation that will be totally responsive to our needs. It also appears that a one semester program does not provide adequate time for the necessary on-the-job training in the high technology areas. All other areas were evaluated as acceptable. (See Appendix Q)

Our experience shows the feasibility of a district starting with one program servicing a number of high schools. If mobility of students exists within the district to support other programs, it can be extended to the High Technology Internship Program. During lunch periods students are bussed between high schools to make as many high school programs as possible available to all students within the district. Students from Edgewood and Memorial High Schools rode this transportation to John F. Kennedy High School and joined the Kennedy students for transportation to the training locations. Return transportation dropped students at their respective high schools.

Because of the time and distance involved in dealing with business management at the levels needed to establish this type of training it is suggested that a school or district have a full-time program manager assigned and working as early as four months prior to enrollment of students into the program. Additionally, our experience shows that a full time program manager could adequately manage from 25 to 30 students in a High Technology Internship Program. It is felt that the intensity and levels of coordination necessary to have an effective program would make it impractical to handle more than 30 students.

As with Judson Independent School District, industry

has been especially lauditory about the program. Interest for participation in our program next year has been expressed by several additional high tech industries in the area. Because of the time compression related to our initial mid-year start, these industries could not respond in time to participate this semester but express interest in next years program.

The structure of this program; high tech training that will help to fill industries future need, the fact that students are not paid and the enthusiasm and motivation on the part of the students, makes the program especially attractive to the High Technology industries. We have found that members of industry and government readily expend time and resources to participate with education to provide quality training and experiences that generally exceed the basic goals of the program. One government agency has offered to teach prerequisite courses to our students during the month of August prior to next school year.

Articulation between all Independent School Districts in the greater San Antonio Area and the post secondary schools in the area is an ongoing process conducted by appointed committees. Contact with San Antonio Community College, St. Philips College and Texas A & M Extension

Institute indicates that they are represented in this committee and will finalize articulation procedures based on committee action. This process of articulation will be an ongoing activity. Students of the varied occupational fields of High Technology would presently need to make arrangements with the post secondary institutional department concerned to take tests for credit in subject areas of qualification. Credit for these courses would be granted when the student completed the basic number of hours required by the institution. Presently Texas A & M Extension will not grant credit for any phases of instruction based on previous experience.

Contact with the Special Education Department and review of special needs students indicates that such students can be accomodated in this program if they meet the selection criteria established for the program. If a student would require special transportation arrangements because of a physical handicap, additional funding would need to be provided by the local school district.

The High Technology Internship Program Manager (Teacher/Coordinator) spends a majority of his time and effort in the management of the program rather than teaching in the classroom. The program manager needs to possess experience with high technology industries,

knowledge of business and management, a sound background in human relations, and be willing to expend the extra effort to manage the program of each student individually. He/She needs to be available to all students prior to departure form the school campus and upon return each day creating a need to devote personal time beyond the 8:00 a.m. to 3:45 p.m. teacher daily time requirement. Persons retired from industry appear to be likely candidates for program managers. (See Appendix N for Program Manger qualifications and Appendix N-1, Task list)

In summary, the combined enthusiastic support of industry, the school administration, and the students has allowed our one semester program for school year 1984-85 to meet its goals and objectives.

CONCLUSIONS AND RECOMMENATIONS

1. The establishement of a High Technology Internship Program at the secondary level for senior high school students is a feasible and productive endeavor. It results in a valid application of the concept of "Partnership in Education." Such programs should be made available to all Texas secondary high schools that determine a need and are located in close proximity to high technology industries that will support the program.

Our experience indicates that industry and government become willing participants in educational training ventures that will return future benefits to them and society as a whole. The Federal Aviation Agency has volunteered to provide resource instructors to aid in the instruction of basic electronics and computer literacy for next years high tech students.

2. Interested students, who are properly motivated and prepared for training with industry in the high technology careers can obtain maximum benefit from a program such as this. Recommend prerequisite courses of basic electronics and computer literacy be included in high school offerings. Until this is done the need exists to provide this training during the summer prior to a students entry into the High Technology Internship Program.

With the mid-semester start date of our program we were unable to provide prerequisite training in basic electronics and/or computer literacy for our students. Those students who had completed courses that related to their fields of training such as computer literacy, computer math, accounting or electronics appeared to obtain maximum benefit from their training. Students without such previous knowledge appeared to be inadequately prepared to take advantage of the situation and training was slowed. (See Items #1, 3, and 11, Supervisors Evaluation, Appendix O and Evaluation Procedures and Findings).

3. High technology training can motivate and attract students

to pursue careers in high technology fields.

Of the thirteen graduating seniors who participated in the program for one semester 70%, or 9 students, stated they will enroll in post secondary education in a high technology field. Two will pursue post secondary education in other than a high technology field and two others stated they need to work first to be financially able to enroll in post secondary education. (See Appendix L, Student Program Evaluation).

4. To effectively implement a High Technology Internship Program in a high school or district our experience shows that a full time program manager needs approximately four months lead time to establish the program. Necessary activities include selection and identification of students, presentation of prerequisite training where needed, establishment of contact with high technology industries, identification of training stations, and transportation arrangements. Also a manager can initially manage approximately 25 to 30 students.

This lead time is necessary to provide the completion of activities that must be done to operate an effective program that will provide the most benefit to the student. It also takes a great deal of time to accomplish the coordination necessary to obtain industries support and participation. This coordination becomes very intense and must be done at three to four levels of management within the industry. (See Evaluation Procedures and Findings).

5. Articulation with post secondary institutions is in process in the San Antonio area and will be accomplished in the overall articulation programs that are presently in progress.

Contact with San Antonio College, St. Philips College, and the Texas A&M Extension in San Antonio indicates that they are involved in committee action for an overall articulation program between secondary and post secondary institutions in

this area. Prior to finalization of articulation procedures, high technology internship students will be allowed to test in areas of qualification and if successful be granted credit at either San Antonio College or St. Philips College. (See Evaluation Procedures and Findings).

6. To effectively implement and conduct a continuing High Technology Internship Program the need exists for continued involvement and support of the school administration from directors through the vocational and academic counselors as well as other teachers within the educational system.

A strong and continuing contact and information program with these persons is necessary to ensure that students who express an interest will not be influenced away from the program. There appears to be some stigma attached to the fact that this is classified as a vocational program, therefore, the impression is that it is not suited for students who are college bound. Some suggest that vocational subjects will not look good on a students record and advise that the student take academic classes on the school campus. There is a need to devote sufficient time and effort to overcome this resistance. With proper information and public relations these persons will realize the effectiveness of the High Technology Internship Program and the fact that the underlying objective of the program is to motivate students to commit themselves to a high tech career and pursue post secondary educational opportunites.

7. Program Managers (teacher/coordinators) for the High Technology Internship Program need to be carefully selected. The nature of the activities performed require a person with the proper background and the motivation and interest to devote many additional hours from personal time to conduct an effective program and provide the student contact needed for a smooth operation.

The High Technology Internship Program Manager needs a bachelor degree, experience at coordinating a cooperative education program, experience with high technology industries, and the motivation and interest to devote the time necessary to properly conduct the program. The majority of time and effort is spent in the management of the program rather than teaching in the classroom. Due to the departure and return times of the students, much personal time is volunteered to meet returning students each day for contact that provides motivation for the student and a chance to be informed of problems or situations that may have surfaced during the training day. (See Appendix N, Program Manager Qualifications, Appendix N-1, Program Manager Task List, and Evaluation and Findings).

8. A competency profile can be developed that will generally apply to all the high tech training positions.

In this profile the essential elements for all vocational programs remain in the standard form. The training competencies fall under the major headings of Orientation, Safety and Security, Work Center Procedures, Information and Concepts, Professional Aspects, Technical Procedures, Technical Applications, and Career Awareness. Due to the many and varied high tech training fields, and the variety of applications within each field it is believed that the more general approach to competencies is appropriate. (See Appendix P, High Technology Internship Competency Profile).

9. Use of the Industrial Core Curriculum with the addition of prerequisite training in basic electronics and computer literacy is appropriate for class related instruction.

The Industrial Core Curriculum covers essential information related to careers in industry. Some parts such as basic math would not be needed with the more advanced students of this program. The Orientation section needs to emphasize the aspects of the High Technology Internship program and treat Industrial

Cooperative Training as another vocational program. The block on the Free Enterprise System needs to be supplemented in the area of business management and organization. (See Curriculum Outline, submitted under separate cover)

10. Special needs students who meet the selection criteria for the program can be accepted for enrollment.

If a special needs student meets the general selection criteria of the program and, for example, has a physical handicap that requires special transportation the additional funding should be provided by the local school district.

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Appendix E.	Six Week Supervisor Student Evaluation
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Appendix I.	High Technology Internship Advisory Committee Program Evaluation
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Appendix K.	High Technology Internship Advisory Committee Membership
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What Is In It For Students?

- Students will have an opportunity to investigate their high tech skill choice before spending time and money on post-secondary education.
- Students will be exposed to real world working environments, ethics, and expectaions while still in high school
- Students will learn from people on the job about various high tech skills through first hand experiences on the actual work site
- Students will gain experience that will help with later employment or college
- Students will have top priority as college co-ops
- Students will be a step ahead of their contemporaries on the high tech job market

Appendix A

For More Information About The
High Technology
Intership Program
Contact The Program Coordinator
Cliff Noll
(512) 433-9343

HIGH TECHNOLOGY
INTERNSHIP

HIGH TECHNOLOGY INTERNSHIP

EDGEWOOD INDEPENDENT
SCHOOL DISTRICT

the future is here!

EDGEWOOD HIGH SCHOOL
JOHN F. KENNEDY HIGH SCHOOL
MEMORIAL HIGH SCHOOL

What is High Technology?

It is a term generally applied to all tecnologically advanced industries and businesses and refers to new developments in processing, machinery, materials, and health services.

What Are Some High Technology Training Opportunities Offered?

Computer Programming
Computer Operations
Computer Drafting (CAD)
Computer Manufacturing (CAM)
Computer Accounting
Aerospace (Varied)
Electronics (Varied)
Bacteriology Technician
Chemistry Technician
Medical Technician
Computer Repair
Bio-Medical Technician
Health Science (Varied)
Telecommunications Technician

What Are The Program Objectives For High Technology Intership?

- To provide career orientation and exploration
- To learn some of the entry level tasks of the high tech skill chosen

How Does The Program Work?

- Students must volunteer and then be selected
- training will take place with local high tech industries
- students will train Monday through Thursday, from 1:00-4:00 P.M.
- Bus transportation is provided to training site
- Students are not paid
- Students earn 3 high school credits
- Students may be required to attend either computer literacy or electronics classes in the summer

What Are The Requirements To Enroll In High Technology Intership

Senior status
2 years math including algebra II or geometry
2 years science
Appropriate grades
Good attendance record
Low tardy record
Good discipline record
Good community citizenship
Have taken preparatory classes in chosen skill
Parental Consent

What Is In It For Industry?

- Help schools address the high technology skill shortage
- Option of offering students employment
- Enhance community image

EDGEWOOD INDEPENDENT SCHOOL DISTRICT

5358 WEST COMMERCE STREET
SAN ANTONIO, TEXAS 78237
(512) 433-2361

James R. Vasquez
Superintendent

Enrique M. Barrera
President

David D. Garza
Vice President

Sam Williams, Jr.
Secretary

Pablo Escamilla, Jr.

Marcos R. Solis

Ruben Solis

Raul Villasenor

January 15, 1985

To: Local Industries

Edgewood Independent School District has received approval from the Texas Education Agency to implement a High Technology Internship Program. This exemplary and innovative proposal is to determine what benefits such a program would provide for our students and local industry. We have approval and funding to conduct the program for the second semester which is January thru May 1985, with the possibility of continued funding through the 1985-86 school year.

Briefly, the program is to be a cooperative effort with the High Technology Industries, The Edgewood Independent School District, and the participating students. It will consist of internship training for three hours per day, Monday thru Thursday each week. Teaching of related information and conduct of administrative functions will take place in the district classroom on Friday. Transportation for students will be provided to and from the internship sites by the school district. To encourage training rather than production, students will not be paid by the cooperating industry.

Junior and senior class students will be selected based upon their expressed interest in high technology education and careers. They will be in the top one-third of their class and will have the needed prerequisite courses in mathmatics and science. Additionally, personal conduct, dependability and citizenship will be a factor in the selection.

The need for prerequisite training in computer literacy, electronics fundamentals and other dis-

ciplines is under consideration. These will necessarily be determined based upon the areas of interest to the student and the levels of training at the internship locations.

To further the concept of cooperation between industry and secondary education we urge you to consider joining with us as a cooperation industry to serve as an internship location for our students. We are certain that you can readily see the future benefits to your industry as well as to these students when they elect to continue their education in pursuit of High Technology Careers.

If you need further information, I am attaching a list of contact persons. We are looking forward to your favorable consideration and participation in this program.

Sincerely,

Sylvia Hinojosa, Director
Guidance, Occupational & Community Education

SH:eo

Appendix A-1 Cont'd

EDGEWOOD INDEPENDENT SCHOOL DISTRICT

HIGH TECHNOLOGY CONTACT PERSONS

Director,
Guidance, Occupational & Community Education:

Sylvia Hinojosa
4127 Eldridge
San Antonio, TX 78237
Telephone: 433-9412

District Consultant for Trade & Industrial Education:

Jimmie Scruggs
4127 Eldridge
San Antonio, TX 78237
Telephone: 433-9412

High Technology Program Coordinator:

Clifford J. Noll
John F. Kennedy High School
1922 S. General McMullen
San Antonio, TX 78237
Telephone: 433-9343

Appendix A-1 Cont'd

FIRMS INTERESTED IN COOPERATING HIGH TECHNOLOGY PROGRAM

Data Point Corporation

Fairchild Aircraft Corporation

Brooks Air Force Base Bio-Medical Lab

Brooks Air Force Base Metrology Lab

Wilford Hall Medical Center Bio-Medical Lab

Lackland AFB T.V. Production Lab

Kelly AFB

Valero Energy Corporation

Southwestern Bell Telphone

United Services Automobile Association

Federal Aviation Administration

IBM

Radio Shack

City Public Service Board

Southwest Research

E G & G Automotive Research

Advance Micro Devices

NAME OF STUDENT	SCHOOL	COURSE	COMPANY
Rodriguez, Abel G.	EHS	Drafting Design	Valero Energy Corp.
Reyes, Efrain	KHS	Engineering	Valero Energy Corp.
Garcia, Norma	KHS	Computer Accounting	Valero Energy Corp.
Munoz, Rene	KHS	Coumpter Operations	Valero Energy Corp.
Robles, Elizabeth D.	KHS	Bio-Med. Equip. Maint-	Brooks AFB
Olivares, Andy P.	EHS	Bio-Med. Equip. Maint-	Brooks AFB
Sifuentes, Jose A.	EHS	Bio-Med. Equip. Maint-	Brooks AFB
Zaragoza, David E.	MHS	Drafting Design(CAD)	Fairchild Aircraft Co:
Lozano, Rudy E.	MHS	Instrument Tech.	Fairchild Aircraft Co:
Castilla, Juan H.	EHS	Instrument Tech.	Fairchild Aircraft Co:
Mc Donald, Bryan K.	MHS	Adm./Prof,Dev./ ACFT Certification	Fairchild Aircraft Co:
Perez, Patricia	KHS	ACFT Parts Technology	Fairchild Aircraft
Torres, Jose	EHS	ACFT Parts Technology	Fairchild Aircraft
Garza, Carol	KHS	ACFT Parts Technology	Fairchild Aircraft
Munoz, Timonthy	MHS	ACRT Parts Technology	Fairchild Aircraft
Rodriguez, Susan	KHS	Pers./Prof.Dev/ Computer Technology	Fairchild Aircraft
Garcia, Ray	KHS	Compt./Maint./Tech	Data Point
Garcia, David	KHS	Compt./Main./Tech	Data Point
Raygoza, Arturo	KHS	Compt./Main./Tech	Data Point
Hylton, Carlos	KHS	Compt./Main./Tech	Data Point
County, Margaret A.	MHS	Computer Accounting	Data Point
Cisneros, Rachel	MHS	Computer Opr./Prog.	Data Point
Campos, Isacc(Withdrawn 4-9-85)	KHS	Bio-Medical Lab. Tech	Wilford Hall Medical Center
Hernandez, Ernest	EHS	Bio-Medical Lab. Tech	Wilford Hall Medical Center

HIGH TECHNOLOGY INTERNSHIP
TRAINING AGREEMENT

This document outlines the details of a training-with industry agreement between Edgewood School district and _____(Company). This is not a contract.

The purpose of this training is to provide interested high school seniors the opportunity to explore selected high technology skills and careers, and to learn the related introductory theory and tasks. Students will not be paid.

Mr.(s)_____(Supervisor) will be responsible for training_____(Student) as a _____ (Skill); which will commence on or about _____, and continue through May 12, 1985. Normally, training times will be from 1:00 p.m. to 4:00p.m. Mondays through Thursdays. (Note: Students will remain at school on Fridays to complete related training and administrative tasks).

For planning purposes, students are expected to follow on-the-job training procedures: ie., acquire new information, concepts, techniques and procedures; complete a period of over the shoulder observation, trial and error learning, and supervised production; then accomplish enough minimally supervised production to insure the learning transition is completed. (Note: This Latter phase would normally not exceed 1/3 of the training time).

Safety policies and regulations, as well as the general safety of the students while training, is an underlying requirement of all training activities. While on company premises, students are expected to conduct themselves as though they were employees of that company, and will therefore comply with applicable company policies and regulations. The training site functions as an extension of Edgewood I.S.D. school campuses. Therefore, parents agree to assume the same responsibilities and liabilities for the student while at the training site as they would during any other normal school activity.

Company training supervisors agree to evaluate student performance, in writing, every six (6) weeks on an evaluation instrument provided by the Edgewood I.S.D. High Technology Program Manager. Student will receive 1½ units of high school credit for successful completion of the training outlined on the reverse side of this document. Student training will be monitored continually by the High Technology Program Manager.

Appendix D

TRAINING OUTLING

The training outline below is a generalized statement of the major blocks of on-the-job training to be offered in the sequence shown and may vary in both scope and depth depending on the student's abilities and interests.

A. Students will know job responsibilities, office procedures, facilities involved, work related injury procedures, security measures and involvement, attendance policies, standards of conduct, training hours, evaluation methods, fire prevention and evacuation procedures, and safety regulations and procedures.

B. January - May. The student, under the supervision of the Airframe Supervisor, will become knowledgeable in the following areas:

1. The basic airplane and the inherent design problems associated with airframe construction.

2. Engineering Orders (EO) incorporation.

3. Engineering Drafting Room Manual.

4. Engineering Drawing Release System.

5. Familiarity with design process from conception to completion.

6. Use of Computer Aided Design (CAD). Student to receive weekly instuction in this newest of engineering tools.

Dissatisfaction with any aspect of student performance by any one of the signatories of this document will be grounds for review of the student's retention in this program.

Student will be accepted and trained without regard to race, color, national origin, sex, or handicapping condition.

Student	Supervisor
Parent	Program Manager

Appendix D Cont'd

HIGH TECHNOLOGY INTERNSHIP
TRAINING AGREEMENT

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Appendix D Cont'd

TRAINING OUTLINE - COMPUTER TECHNICIAN

The training outline below is a generalized statement of the major blocks of on-the-job training to be offered to the student. The training may vary in both scope and depth depending on the student's interests and abilities.

A. Students will know job responsibilities, office procedures, facilities involved, work related injury procedures, security measures and involvement, attendence policies, standards of conduct, training hours, evaluation methods, fire prevention and evacuation procedures, and safety regulations and procedures.

B. The student will be trained to service Data point computer products.

1. Computer CPU's. This will include motherboards, processing chips, and other configuration of RAM & ROM chips.

2. Key boards - Testing each key function and its addressing process to the system.

3. Disk Drives - Checking drive speed, analog cards within the drives, proper drive - head alignment and preventative maintance procedures.

4. Monitors - seating and adjusting resolution between Monochrome and Color monitor.

5. Printers - Functions of Dot Matrix Letter Quality and character print sets.

6. Pherpherical Cards - Such as, printer interface, memory expansion, controller cards, modem and buffer interface.

7. Diagnose and resolve technical problems and perform preventive maintenance on data point equipment.

8. Assist in the installation and assembly of Datapoint equipment.

C. The student will assist in the preparation of documentation and reports associated with the maintenance and repair of Datapoint equipment.

D. The student will gain knowledge of the appropriate methods of Communicating the status of equipment problems and customer relations matters to management.

E. The student will be able to use test equipment. For example Diagnostic diskettes, meters, chips, and all monitoring devices.

Dissatisfaction with any aspect of student performance by any one of the signatories of this document will be grounds for review of the student's retention in this program.

Student will be accepted and trained without regard to race, color, national origin, sex, or handicapping condition.

Student	Supervisor
Parent	Program Manager

Appendix D Cont'd

HIGH TECHNOLOGY INTERNSHIP
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For planning purposes, students are expected to follow on-the-job training procedures: ie., acquire new information, concepts, techniques and procedures; complete a period of over the shoulder observation, trial and error learning, and supervised production; then accomplish enough minimally supervised production to insure the learning transition is completed. (Note: This Latter phase would normally not exceed 1/3 of the training time).

Safety policies and regulations, as well as the general safety of the students while training, is an underlying requirement of all training activities. While on company premises, students are expected to conduct themselves as though they were employees of that company, and will therefore comply with applicable company policies and regulations. The training site functions as an extension of Edgewood I.S.D. school campuses. Therefore, parents agree to assume the same responsibilities and liabilities for the student while at the training site as they would during any other normal school activity.

Company training supervisors agree to evaluate student performance, in writing, every six (6) weeks on an evaluation instrument provided by the Edgewood I.S.D. High Technology Program Manager. Student will receive 1½ units of high school credit for successful completion of the training outlined on the reverse side of this document. Student training will be monitored continually by the High Technology Program Manager.

Appendix D Cont'd

TRAINING OUTLINE

The training outline below is a generalized statement of the major blocks of on-the-job training to be offered in the sequence shown and may vary in both scope and depth depending on the student's abilities and interests.

A. In all areas the student will be instructed in job responsibilities, proper methods and procedures, review processes, proper schedule preparation, reconciliation methods, fire prevention and evacuation procedures, and safety procedures.

B. The student will be instructed in the following general areas:

1. Accounts Payable - General and Administrative Expenses

    a. Classify expenses for proper recording to the general ledger.
    b. Organization of the voucher file room.
    c. Online and off-line check preparation.
    d. Reconciliation of accounts payable.
    e. Online journal entry adjustment.
    f. Proper support documentation for payment.

2. Accounts Receivable

    a. Reconcil invoices to the General Ledger.
    b. Verify cash received.
    c. Monitor unpaid invoices and maintain aging schedule.

3. Gas Purchase Cost, Sales, and Exchange Accounts

    a. Prepare input entry into system to generate sales/cost.
    b. Make adjusting entry to journal.
    c. Review contract specifications and prepare input to initiate a sale, purchase or exchange journal entry.
    d. Prepare sale invoice.
    e. Analysis of sales and cost accounts.

C. Student will be exposed to IBM copier, IBM 3178 CRT, IBM 5520 Word Processor and ten key adding machine.

Dissatisfaction with any aspect of student performance by any one of the signatories of this document will be grounds for review of the student's retention in this program.

Student will be accepted and trained without regard to race, color, national origin, sex, or handicapping condition.

Student	Supervisor
Parent	Program Manager

Appendix D Cont'd

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A. Students will know job responsibilities, office procedures, facilities involved, work related injury procedures, security measures and involvement, attendance policies, standards of conduct, training hours, evaluation methods, fire prevention and evacuation procedures, and safety regulations and procedures.

B. January - May. The student, under the supervision of the Senior Instrumentation Technician, will be taught and master the following:

1. Proper procedure to set-up and maintain the calibration laboratory and associated instruments.

2. Techniques for measuring various aircraft parameters, from hands-on installation of transducers on a test vehicle, through testing, calibration and recording on the aircraft.

3. Reduction of data to Engineering units using the data reduction computer.

Dissatisfaction with any aspect of student performance by any one of the signatories of this document will be grounds for review of the student's retention in this program.

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A. Students will know job responsibilities, office procedures, facilities involved, work related injury procedures, security measures and involvement, attendance policies, standards of conduct, training hours, evaluation methods, fire prevention and evacuation procedures, and safety regulations and procedures.

B. Students will be able to function in a lab environment upon completing basic familiarization with tools and equipment. Students will have classroom instruction and hands on training on operation the theory of various equipment items and electrical components.

1. Digital Electronic:

Binary Nature of Digital Circuits	Flip-flops
Basis of Transistors and ICs	Counters, Shifts &
Logic Gates and Symbols	Registers
Introduction to Digital IC Families	Combination Logic Circuits
Simple Trouble Shooting Techniques	Display Techniques
Trouble Shooting Digital ICs	IC Manufacturing
	Memories

2. Transistors:

Transistors vs Vacuum Tubes	Feedback Amplifiers
Transistors and Temperature	Why a Transistor Amplifier
Current Drive vs Voltage Drive	Field Effect Transistors
Multistage Amplifiers	and Unijunction Transistors
Trouble Shooting Tips	Breakdown Diodes, Tunnel
	Diodes and SCRs

3. Blood Gas Systems: General Introduction; IL Series Blood Gas Analyzers; IL Series Co-Oximeter Calibration and Maintenance.

4. Flame Photometer Systems: IL Series Flame Photometers

5. Basic Oscilloscopes: Oscilloscope Operation and Waveform.

6. Defibrillators: Physio Control Lifepack 4 and Hewlett Packard.

7. Electrocardigraph: Patient Systems (Hewlett Packard ECG Maintenance).

Presentations will be followed by discussions with a Bio-Medical Equipment Maintenance Technician. In addition to video tapes, various training guides will be used to cover basic electronic concepts and hospital safety.

C. Equipment Maintenance: Students will be able to assist Biomedical Equipment Maintenance Technicians perform safety checks and repair, calibrate and perform preventive maintenance inspections on medical equipment such as:

Defibrallator	Ph Meters
Water Distilling Systems	Spectrophotometers Systems
Electrocaridograph Machines	Physiological Monitors
Dental Operating Systems	Ultrasonic Cleaning Units
Sterilizers, steams, gas, chemical	Water Baths
Flame Photometers	Respirators
Infant Incubators	X-Ray Apparatus

While this will give an in-depth exploration of the medical equipment repair field, it will require a conscientious effort on the part of the student to receive maximum benefit from the program.

Dissatisfaction with any aspect of student performance by any one of the signatories of this document will be grounds for review of the student's retention in this program.

Student will be accepted and trained without regard to race, color, national origin, sex, or handicapping condition.

Student	Supervisor
Parent	Program Manager

Appendix D Cont'd

HIGH TECHNOLOGY INTERNSHIP
TRAINING AGREEMENT

This document outlines the details of a training-with industry agreement between Edgewood School district and _____(Company). This is not a contract.

The purpose of this training is to provide interested high school seniors the opportunity to explore selected high technology skills and careers, and to learn the related introductory theory and tasks. Students will not be paid.

Mr.(s)_____(Supervisor) will be responsible for training_____(Student) as a _____ (Skill); which will commence on or about _____, and continue through May 12, 1985. Normally, training times will be from 1:00 p.m. to 4:00p.m. Mondays through Thursdays. (Note: Students will remain at school on Fridays to complete related training and administrative tasks).

For planning purposes, students are expected to follow on-the-job training procedures: ie., acquire new information, concepts, techniques and procedures; complete a period of over the shoulder observation, trial and error learning, and supervised production; then accomplish enough minimally supervised production to insure the learning transition is completed. (Note: This Latter phase would normally not exceed 1/3 of the training time).

Safety policies and regulations, as well as the general safety of the students while training, is an underlying requirement of all training activities. While on company premises, students are expected to conduct themselves as though they were employees of that company, and will therefore comply with applicable company policies and regulations. The training site functions as an extension of Edgewood I.S.D. school campuses. Therefore, parents agree to assume the same responsibilities and liabilities for the student while at the training site as they would during any other normal school activity.

Company training supervisors agree to evaluate student performance, in writing, every six (6) weeks on an evaluation instrument provided by the Edgewood I.S.D. High Technology Program Manager. Student will receive 1½ units of high school credit for successful completion of the training outlined on the reverse side of this document. Student training will be monitored continually by the High Technology Program Manager.

Appendix D Cont'd

TRAINING OUTLINE - COMPUTER TECHNICIAN

The training outline below is a generalized statement of the major blocks of on-the-job training to be offered to the student. The training may vary in both scope and depth depending on the student's interests and abilities.

A. Students will know job responsibilities, office procedures, facilities involved, work related injury procedures, security measures and involvement, attendance policies, standards of conduct, training hours, evaluation methods, fire prevention and evacuation procedures, and safety regulations and procedures.

B. The student will be trained to service Datapoint products.

1. Key boards - Testing each key function.

2. Sub-assemblies - Troubleshoot and perform test functions on sub assemblies.

3. Systems - Troubleshoot and perform test functions on systems.

4. Use of Test Equipment - Miscellaneious testing equipment, including DVM'S, multimeter, test set and osciloscope.

5. Troubleshoot malfunctions to board and/or component level using schematics, logic diagrams, wire lists, and test equipment.

6. Analyze, troubleshoot, trace, and repair sub assemblies, terminals or systems.

7. Complete necessary documentation associated with the test, alignment, troubleshooting and repair of subassemblies or units.

Dissatisfaction with any aspect of student performance by any one of the signatories of this document will be grounds for review of the student's retention in this program.

Student will be accepted and trained without regard to race, color, national origin, sex, or handicapping condition.

Student	Supervisor
Parent	Program Manager

Appendix D Cont'd

SUPERVISOR'S EVALUATION
HIGH TECHNOLOGY INTERNSHIP PROGRAM
Edgewood Independent School District

1st 6 weeks____
2nd 6 weeks____
3rd 6 weeks____
4th 6 weeks____
5th 6 weeks____
6th 6 weeks____

Student's Name _____ Date _____

Training Location _____

Training Position _____

The purpose of this evaluation is to comply with course requirements related to the student's progress during the reporting period, as well as to provide positive feedback to the student concerning on-the-job performance. In determining each rating, compare the student to other students that you have known who were of similar age and experience. Place a rating number using the rating scale to the right. Please discuss this rating with the student and return it in the enclosed envelope.

Rating Scale	
Superior	10
Excellent	9
Very Good	8
Good	7
Fair	6
Poor	5

Thank you very much,

Cliff Noll
Program Manager
433-9343

FACTORS TO BE RATED	RATING	COMMENTS
Attitude		
Cooperation with supervisor		
Cooperation with fellow employees		
Appearance		
Punctuality		
Dependability		
Interest in learning the skill		
Growth in job knowledge		
Growth in job ability		
Quality of workmanship		

Is the student making satisfactory progress toward learning the tasks outlined in the Training Agreement? YES or NO (Circle one)
Comments: _____ (Continue on reverse)

_____
Signature of Supervisor

EDGEWOOD INDEPENDENT SCHOOL DISTRICT
HIGH TECHNOLOGY INTERNSHIP

STUDENT CRITIQUE

Fourth 6 WKS ___
Fifth 6 WKS ___
Sixth 6 WKS ___

Name: _____ Date: _____

Skill: _____

Training Location: _____

Training Supervisor: _____

1. How is your training progressing when compared to your training outline?

_____

_____

_____

2. Do you consider your training a valuable experience? _____

_____

_____

3. How would you compare your training to school classes? _____

_____

_____

4. How have your career objectives changed since you have been in training?

_____

_____

_____

_____

5. How satisfactory has transportation been? _____

_____

6. How well do you get along with your training supervisor? _____

_____

_____

_____

Appendix F

7. What kind of problems have you encountered at your training location?_

_____

_____

_____

_____

_____

8. Have you experienced any problems keeping your school grades up?_____

_____

_____

9. Have your related studies been relevant to your training?_____

_____

_____

10. What changes would you make in your training program?_____

_____

_____

_____

_____

_____

COMMENTS:

EDGEWOOD INDEPENDENT SCHOOL DISTRICT
HIGH TECHNOLOGY INTERNSHIP

ADMINISTRATOR EVALUATION

Please respond to the following questions by checking yes, in part, or no. You will note that at one end of the scale responses would be positive (Yes), while at the other end of the scale they are negative (No).

	Yes	in part	No
1. Was student academic preparation adequate to meet the high technology training requirements?	___	___	___
Comments: _____			
_____			
2. Were student selection procedures adequate?	___	___	___
Comments: _____			
_____			
3. Were individual student training outlines generally comprehensive and appropriate for the skill?	___	___	___
Comments: _____			
_____			
4. Did training supervisors follow the training outlines?	___	___	___
Comments: _____			
_____			
5. Was the level of skill achieved by each student considered to be worthy of the time and expense?	___	___	___
Comments: _____			
_____			
6. Were there any training alternatives available wherein the student might achieve the same skills?	___	___	___
Comments: _____			
_____			
7. Were students generally satisfied with the training received?	___	___	___
Comments: _____			
_____			

		Yes	in part	No
8.	Did students remain at the training site selected?	___	___	___
	Comments: _____			
	_____			
9.	Were students counseled at program conclusion concerning high technology opportunities?	___	___	___
	Comments: _____			
	_____			
10.	Were training locations well suited for high technology training?	___	___	___
	Comments: _____			
	_____			
11.	Were training supervisors capable of providing the training outlined?	___	___	___
	Comments: _____			
	_____			
12.	Were complaints/problems resolved equitably and without delay?	___	___	___
	Comments: _____			
	_____			
13.	Were training supervisors generally satisfied with the quality of students assigned?	___	___	___
	Comments: _____			
	_____			
14.	Did the school coordinator maintain good relations with training supervisors?	___	___	___
	Comments: _____			
	_____			
15.	Did the school coordinator visit the training locations frequently?	___	___	___
	Comments: _____			
	_____			

		Yes	in part	No
16.	Were industry comments favorable at program conclusion?	___	___	___
	Comments: _____			
	_____			
17.	Were program goals achieved?	___	___	___
	Comments: _____			
	_____			
18.	Were program objectives achieved?	___	___	___
	Comments: _____			
	_____			
19.	Were facilities adequate?	___	___	___
	Comments: _____			
	_____			
20.	Were training materials adequate?	___	___	___
	Comments: _____			
	_____			
21.	Was the curriculum relevant?	___	___	___
	Comments: _____			
	_____			
22.	Was transportation adequate?	___	___	___
	Comments: _____			
	_____			
23.	Was supervision adequate?	___	___	___
	Comments: _____			
	_____			
24.	Was coordination with industry adequate?	___	___	___
	Comments: _____			
	_____			

	Yes	in part	No
25. Was funding adequate?	___	___	___

Comments: _____

_____

26. Was time allowed for on-the-job training adequate?	___	___	___

Comments: _____

_____

27. Was time allowed for related training adequate?	___	___	___

Comments: _____

_____

EDGEWOOD INDEPENDENT SCHOOL DISTRICT
HIGH TECHNOLOGY INTERNSHIP

SUPERVISOR EVALUATION

Please respond to the following questions by circling the number applicable on the rating scale. You will note that at one end of the scale responses would be positive (Yes), while at the other end of the scale they are negative (No). The example is given below for clarification.

EXAMPLE:	YES				NO
Students remained interested in their internship throughout the semester.	1	2	3	4	5

	YES				NO
1. Was student academic preparation adequate to meet the High Technology training requirements? Comments: _____ _____ _____					
2. Were individual student training outlines generally comprehensive and appropriate for the skill? Comments: _____ _____ _____	1	2	3	4	5
3. Did training supervisor's follow the training outlines? Comments: _____ _____ _____	1	2	3	4	5
4. Was the level of skill achieved by each student considered to be worthy of the	1	2	3	4	5

Appendix H

		YES				NO
	time and expense? Comments: _____					
5.	Were any training alternatives available wherein the student might achieve same skill? Comments: _____	1	2	3	4	5
6.	Were students generally satisfied with the training received? Comments: _____	1	2	3	4	5
7.	Did students remain at the training site selected? Comments: _____	1	2	3	4	5
8.	Were training locations well suited for high technology training? Comments: _____	1	2	3	4	5
9.	Were training supervisors capable of providing the training outlined? Comments: _____	1	2	3	4	5

Appendix H Cont'd

	YES				NO
10. Were complaints/problems resolved equitable without delay?	1	2	3	4	5
Comments: _____					
_____					
_____					
11. Were training supervisors generally satisfied with the quality of students assigned?	1	2	3	4	5
Comments: _____					
_____					
_____					
12. Did the school coordinator maintain good relations with the training supervisors?	1	2	3	4	5
Comments: _____					
_____					
_____					
13. Did the school coordinator visit the training locations frequently?	1	2	3	4	5
Comments: _____					
_____					
_____					
14. Where program goals achieved?	1	2	3	4	5
Comments: _____					
_____					
_____					
15. Were program objectives achieved?	1	2	3	4	5
Comments: _____					
_____					
_____					

Appendix H Cont'd

	YES				NO
16. Were facilites adequate?	1	2	3	4	5
Comments: _____					
_____					
_____					
17. Were training materials adequate?	1	2	3	4	5
Comments: _____					
_____					
_____					
18. Was transportation adequate?	1	2	3	4	5
Comments: _____					
_____					
_____					
19. Was supervisiion adequate?	1	2	3	4	5
Comments: _____					
_____					
_____					
20. Was coordination with industry adequate?	1	2	3	4	5
Comments: _____					
_____					
_____					
21. Was time allowed for on-the-job training adequate?	1	2	3	4	5
Comments: _____					
_____					
_____					

Appendix H Cont'd

Advisory Committee Program Evaluation
High Technology Internship Program
Edgewood Independent School District

1. Do you feel that you understand the goals and objectives of this program?
Comments: _____

_____

_____

2. Would you recommend any changes to these goals and objectives? _____

_____

_____

3. Is the composition of this committee about what you think it should be?
Changes? _____

_____

_____

4. In general, do you agree with the frequency and content of meetings thus far?
Changes? _____

_____

_____

5. Do you feel that you were able to play a meaningful role as a member of this committee? Changes? _____

_____

_____

6. What suggestions would you make to improve the High Tech Program in the following areas:

   a. Scope and size of program:

   b. Procedures for carrying out the program:

   c. Selection of training site/skills:

d. Selection of students:

e. Cooperation with other high schools:

f. Articulation with post secondary schools:

g. Administrative involvement and support:

h. Cost effectiveness:

i. Public relations:

j. Other

EDGEWOOD INDEPENDENT SCHOOL DISTRICT

OCCUPATIONAL EDUCATION AND TECHNOLOGY

HIGH TECHNOLOGY ADVISORY COUNCIL MINUTES

I. The Kennedy High School Technology Internship Advisory Council met February 19, 1985, at Kennedy High School in the Homemaking Department. After a delightful lunch, Cliff Noll called the meeting to order and introduced the members allowing each one to tell the group where they worked and their position in the industry.

The following were present:

William L. Czervinski	Joe Mireles
Bruce A. FitzGerald	Ernest Nicholson
Sylvia Hinojosa	Vernon Pope
Trudi Ingram	Cliff Noll
Patricia Lindley	Jimmie Scruggs
John Taylor	James R. Vasquez
Joe Sanchez	Bill Meyers

II. Mr. Vasquez welcomed all members and expressed appreciation for their support of our High Technology Internship program.

III. Cliff Noll explained the purpose of the advisory committee. At this time, nominations for chairperson were opened. Bruce FitzGerald was elected as chairman of the advisory committee. He accepted and took charge of the proceedings. Joe Mireles was elected alternate chairman.

IV. Mr. Noll gave a brief overview of the events from approval of the program by Texas Education Agency in December, 1984, until the present time. William Czervinski, from the Federal Aviation Agency, gave a briefing on his organization's willingness to assist in Computer Literacy and Electronics prerequisite training of students for next year's program.

V. The following committee was established to review the training agreements:

Trudi Ingram
Bill Czervinski
Bruce FitzGerald
Cliff Noll

VI. The next meeting will be held on a Tuesday in April. At least one other meeting will be held in May. The time and place of these meetings will be selected later.

VII. Jimmie Scruggs suggested that the committee give their approval of student training locations as high technology training sites. The chairman discussed this and a motion was made to defer action until the membership committee. Mr. Noll suggested that no student be allowed to enter the program after today. All members agreed. Mrs. Hinojosa and Mr. Nicholson said they would not let this happen.

VIII. There was a general discussion on program funding and members were encouraged to voice their opinions of the program. This discussion indicated that the program has the enthusiastic support of the education administration as well as the industrial community.

IX. The meeting was adjourned at 1:45 p.m.

EDGEWOOD INDEPENDENT SCHOOL DISTRICT

OCCUPATIONAL EDUCATION & TECHNOLOGY
HIGH TECHNOLOGY ADVISORY COMMITTEE MINUTES

I. The second meeting of the Edgewood Independent School District High Technology Internship Advisory Committee was held on April 2, 1985, at Memorial High School in the Homemaking Department. After a terrific lunch, the meeting was called to order by Bruce FitzGerald, the committee chairperson.

COMMITTEE MEMBERS:

Bruce FitzGerald-Committee Chairman
*Joe Mireles-Alternate Chairman

*Anthony Castellanos	*Ernest Nicholson
*James Cogdell	Clifford Noll
*Doug Cooper	Joe Sanchez
William L. Czervinski	Jimmie Scruggs
Thomas Harris	John Taylor
*Sylvia Hinojosa	Paul Thompson
*Patricia Lindley	James Vasquez
Brenda McCain	Walter Vincent

II. Mr. FitzGerald introduced the members because of the number of new members. Mr. Thompson is a new member representing Data Point Corporation and Dr. Harris is a new member representing the San Antonio Community College. (Mr. Vincent was a replacement for Mr. Pope from the USAF School of Aerospace Medicine and Ms. McCain attended as the alternate for Ms. Ingram from Lackland Air Force Base.)

III. Cliff Noll read the minutes of the previous meeting and they were approved as written.

IV. Cliff Noll presented a brief update of program activities. Southwestern Bell is in a hold status on their commitment to participate next year because of strong union objection. Norm Steppe is working the problem and will let us know the outcome. Sprague Electronics is primarily a production facility and the only placement of students for High Tech Training would be in company support facilities such as computer accounting. We are continuing to meet with the Federal Aviation Agency and Kelly Air Force Base to work out what they can do for us next year. Future meetings

will be set up to talk to Southwest Research, United Services Automobile Association, and EG&G Automotive Research Incorporated. Training Outlines have been completed on all 24 students. Also, students completed their first six week critique. Comments were primarily positive in nature, however, several negative comments appeared relating to the ability of one of the drivers. This problem was discussed with the transportation company and is resolved. One student desired to change to the computer accounting field, however, when given the opportunity she decided to stay in her present training position. Bruce FitzGerald commented on the student level of writing when filling out the critiques. Suggestions were made to improve this and changes will be made in the method of administering the critique.

V. Brenda McCain reported on the committee review of the Training Outlines, Training Stations, and Program Evaluation Enstruments. The committee felt that all itmes meet the needs and intent of High Technology Internship Program.

VI. Bruce FitzGerald provided the committee with information from a March 26, 1985, Wall Street Journal article about "The Growing Mismatch Between Job Skills and Job Seekers." He commented that this article addressed the high tech skills and falls right in line with what we are trying to do in the High Technology Internship Program.

VII. The meeting was opened for comments and a discussion followed John Taylor's remarks to not be overly concerned about the first student critique because it takes time for the students to settle down in their new situation. Mr. Taylor does not try to make adjustments until after the second critique. He then commented on a discussion he had with James Cogdell from TEA about where High Tech fits into the program in relation to other cooperative training programs and paid training versus unpaid training. A general discussion followed with various members expression their opinions. Mr. Vasquez stated that the "time is right" to get as many ideas and programs as possible into effect because the "window of opportunity is open and will close soon." He feels that after the window closes these ideas and programs will be sorted out and those that are effective will be continued.

VIII. The date of the next meeting was set for May 21, 1985.

IX. The meeting was adjourned at 1:15 p.m.

EDGEWOOD INDEPENDENT SCHOOL DISTRICT

OCCUPATIONAL EDUCATION & TECHNOLOGY
HIGH TECHNOLOGY ADVISORY COMMITTEE MINUTES

I. The third meeting of the Edgewood Independent School District High Technology Internship Advisory Committee was held on May 14, 1985, at the Lackland Officers Club. After a "Dutch Treat" lunch, the meeting was called to order by Bruce FitzGerald, the committee chairperson.

COMMITTEE MEMBERS:

Bruce FitzGerald-Committee Chairman
Joe Mireles-Alternate Chairman

Anthony Castellanos	*Ernest Nicholson
*James Cogdell	Clifford Noll
*Doug Cooper	*Joe Sanchez
William L. Czervinski	Jimmie Scruggs
*Thomas Harris	John Taylor
*Arthur Hetler	Paul Thompson
Sylvia Hinojosa	James Vasquez
*Patricia Lindley	*Walter Vincent
Trudi Ingram	(* Indicates Members Absent)

II. Mr. FitzGerald Introduced Ms. Joan Lawson who attended as an alternate for William Czervinski. Ms. Lucy Rivera who will be the primary contact for training at Kelly AFB, and Mrs. FitzGerald who was present as a guest of the Chairman.

III. Cliff Noll read the minutes of the previous meeting and they were approved as written.

IV. Cliff Noll presented an update of program activities. He stated that one student was removed from training at Wilford Hall Medical Center because the student had decided that he did not have an interest in the area of training and had become an attitude problem. This was necessary because his lack of interest was affecting the attitude of the young technicians working in the area. United Services Automobile Association is in the process of identifying training locations within their company. Also, the IBM Engineering Detachment at United Services Automobile Association may be a good prospect for student placement. Discussions are continuing with

Southwest Research and Kelly AFB for identification of training locations. The Federal Aviation Agency has stated they will support us in basic electronics and computer literacy training of students during the month of August next year. We are in the process of recruiting students at the three high schools of the district and are shooting for the highest quality students possible.

V. Under old business John Taylor questioned what procedures were used in recruitment. Mrs. Hinojosa described the methods used and John emphasized that there is a need to ensure that the selected students are placed in compatible training locations.

VI. Mr. Vasquez provided information about the May 13, 1985 meeting at TEA with Dr. Kirby, Mr. Lindsey, and Mr. Patterson. He explained the thinking and philosophy of the state board. The board and TEA members were positive about our approach to the teaching criteria of the coordinators for high tech programs, however, they would not ask for a change to the rules because of the many present attacks against House Bill 72. Mr. Vasquez stated that the approach used by the Judson and Edgewood group was that they were on a mission to save a program that works as proven by Judsons' success and Edgewoods' good start. TEA supports the program but it goes against the background of traditional cooperative programs. Future meetings will be established with individual state board members to present our position. Mr. Vasquez states that Mr. FitzGerald and another member of industry would be welcome to participate in these meetings. John Taylor commented about the importance of timing to allow the program to expand to other districts of the state. Bruce FitzGerald stated that he saw a difference between coop programs--other coops are"minimum training programs" where High Tech is a "maximum training program."

VII. Mr. FitzGerald suggested that we consider inviting a school board member to be involved with this committee. District administrators stated they would take care of this.

VIII. The meeting was opened to comments of the membership. Mr. Paul Thompson informed the committee that a student training in his area will be presenting her computer programming project to her math class at

Memorial High School tomorrow. Data point will provide the equipment so she can explain the math methodology involved in programming and demonstrate her program which is a computer numbers game. Trudi Ingram expressed the desire of Lackland Air Force Base to become more involved in the high tech program by placing more students next year. Mr. Noll will follow up on this. John Taylor discussed the fact that many of our students may need financial aid to pursue post-secondary education. He believes there is an obligation to try to help in this area. John made a motion that a High Tecnology Internship Scholarship Fund be established to solicit donations and be administered by this committee. He suggested a vote of commitment by taken of the membership. A motion was made and seconded to establish such a fund. Due to lack of time a vote of commitment and/or disscussion was deferred until the next meeting.

IX. The next meeting will be during the month of September.

X. The meeting was adjourned at 1:25 p.m.

EDGEWOOD INDEPENDENT SCHOOL DISTRICT

HIGH TECHNOLOGY ADVISORY COMMITTEE

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HIGH TECHNOLOGY INTERNSHIP

STUDENT CRITIQUE

		Yes	in part	No
1.	Did your training progress according to your outline?	21	2	0
2.	Do you consider your training a valuable experience?	23	0	0
3.	Did your training compare favorably to school classes? (Better, more exciting, totally different, more responsibility, I learned more than in school classes).	23		
4.	Have your career objectives changed since you have been in training? (Note: Neutral, original objective not stated).	9	0	14
5.	Has transportation been satisfactory? (Occasional tardiness, Sometimes they were late, towards the end they were late a lot, and they were late on occasion).	19	4	0
6.	Did you get along well with your training supervisor?	23	0	0
7.	Did you encounter any problems at your training station? (I did the same kind of work over a couple of days. Some periods were slow at work because the supervisor was busy. My training was slow on days when my supervisor was absent).	3	0	20
8.	Have you experienced any problems keeping your school grades up? (Yes, because I was not ready for the work load. In some cases the program helped me with my grades. Yes, because I had to work after school).	4	0	19
9.	Have you related studies been relevant to your training?	23	0	0
10.	Would you make changes in your training program? (Study about the company you train with as part of related training. Improve timeliness of transportation.	0	7	16

Appendix L

	Yes	in part	No
Students should get paid. A little more computer time. Let us drive our own cars).			
11. If you had it to do over again, would you join the High Technology Internship Program? (Three students that are juniors state they will not enroll in high tech next year because they need the time to meet other academic requirements).	20	0	3
12. Will you pursue a High Technology education after graduation? (Note: thirteen students responded who were seniors -- other students will not graduate this year). (In part-- two students plan to work first then continue education. No. One student will enter college but will not major in a high tech area. One student will enter college but is undecided between Law Enforcement and Electronics).	9	2	2

Appendix L Cont'd

HIGH TECHNOLOGY INTERNSHIP PROGRAM
ADVISORY COMMITTEE PROGRAM EVALUATION

	YES	NO	COMMENTS
1. Do you feel that you understand the goals and objectives of this program? COMMENTS: Appears well defined. The 'Partnership' approach is both economical and practical in providing a 'high tech' educational/vocational program. The dialogue in the advisory meetings and my conversations with students have been most informative. Short range goals yes, but long range goals could be clearer.	14	0	*
2. Would you recommend any changes to these goals and objectives? COMMENTS: Yes, but only from an administrative side i.e. students should be selected only if their career choice is clear so that academics in the classroom are well chosen.	1	13	*
3. Is the composition of this committee about what you think it should be? COMMENTS: Yes, but would like to see the school counselors involved. Yes, cross section of representation has provided needed information exchange, dialogue and assistance.	14	0	*
4. In general, do you agree with frequency and content of the meetings thus far? Yes, any more would be difficult to attend. I would suggest keeping them at the school campuses. Rotation of meeting sites may have been a problem for some but frequency is about right. To date, meeting agenda is detailed and followed, which saves time.	14	0	*
5. Do you feel that you were able to play a meaningful role as a member of this committee? Changes? COMMENTS: No, I couldn't attend all meetings due to scheduling problems. Yes, in as much as this was a first year program for the district/school. I feel I was a productive member, especially in the formative stages. More meaningful sub committee assignments may be necessary next year, as the program grows and events occur.	13	1	*

	YES	NO	COMMENTS
6. What suggestions would you make to improve the High Tech program in the following areas:			
a. Scope and size of program: COMMENTS: Increase the number of industries that cooperate. Do not expand too rapidly, 25-30 students in order to maintain the necessary coordination and program integrity required. Enlarge to 40 students. Make no changes.		*	
b. Procedures for carrying out the program: COMMENTS: Let the academic counselors provide more input. Maintain good follow-up with sponsors, students, and counselors. Critiques are important feedback to all parties. Procedures are O.K. Use busses to take students to training.		*	
c. Selection of students: COMMENTS: Gradually expand the training locations. Careful screening of sponsors is necessary to ensure that a meaningful experience of work life exposure, training, dedicated instructor availability, hands on experience, 'high tech' computer related, and sponsors' commitment to obligated goals of the program in order to benefit students. Try to select training locations closer to Edgewood Independent School District.		*	
d. Selection of students: COMMENTS: Allow for students to see some sites before entering the program. Screen students carefully for the best applicants. Pre-course preparation must be acquired to provide students a basis for understanding to assimilate training received and succeed. A good screening program is necessary for successful student/sponsor relationship. Need more precise screening of students. Students must be more precisely screened to be sure of compatibility with skill.		*	
e. Cooperation with other high schools: COMMENTS: Have joint meetings with both students and administration of the schools		*	

	YES	NO	COMMENTS
and exchange ideas. Appears O.K. Program growth, sponsor search/use/transportation methods should be considered. Possibly a focal point should be established in sponsor search and student load/placement. Keep sponsor in the training phase, not decision phase of how many students to select from what school districts. Very Good. Good.			
f. Articulation with post-secondary schools: COMMENTS: Inform colleges and ask for technical assistance, financial aid possibilities, and invite to meetings. Most necessary step; will provide an incentive for both students and sponsors. Will also encourage students toward college programs and could assist in COOP type program availbility and student placement. Excellent screening process for college students. Continued work needs to be done in this area. This area can be improved. Good.	*		
g. Administrative involvement and support: COMMENTS: Continue to keep communications open and have site visitation on particular days, perhaps during advisory meetings. Appears excellent. Administrative assistance is required for the program coordinator in order to allow the follow-up process to be properly administered, allow for sponsor search, coordination of program with other school districts, and to assist with required administrative duties and reports. Excellent. Need recruitment assistance.	*		
h. Cost Effectiveness: O.K. but would like to have an annual report of some sort with costs and other figures. Cost analysis may be in order. Cost vs benefit must be utilized, to maximize resources and educational benefits; however, some bold steps may be necessary by districts to assure that opportunities exist and benefit the student. Good. Use district school buses for transportation.	*		
i. Public Relations: Good programs never have too much P.R. Good	*		

	YES	NO	COMMENTS
public relations are a motivator of all concerned; students, sponsors, advisory committee, school district and others involved. Good public relations will create interest from all parties and ensure that School District/Boards understand the need for the program. Good.			
j. Other: COMMENTS: Edgewood Independent School District, and especially Mr. Noll, is to be congratulated for establishing this program in what was considered an insurmountable task/time frame. Exchange of views and ideas greatly assisted in preventing reinventing the wheel, by capitalizing on existing programs, their achievements and mistakes. A good cooperative effort by everyone attributed to success and should provide an even better program in the 85-86 school year. I appreciate the opportunity to participate with the District and look forward to our involvement next year. -- Encourage more input from the students in evaluating their program. This should be done away from work/school environment. -- I am new to the program and what I see so far is an excellent program with school and industry participating equally to make things happen. The Coordinator is the Key to program success. He/She has to impress/convince students and business leaders to participate. No matter how good your product is you have to sell it -- especially when it is new-- After a few years program will sell itself but we're not there yet. Coordinator must be diplomatic, dedicated an innovative -- not to mention make sure the students don't miss the bus. He/She interfaces with many groups-- must be able to juggle a number of balls at the same time always knowing which are rubber and which are glass.			*

PERSONNEL

Program Manager Qualifications - CLIFFORD J. NOLL
% of time assigned - 100%
Months Employed - 11 months

High Technology Internship Program Manager (Teacher/Coordinator)

Vocational Teacher - Former ICT Coordinator

Occupational Experience:
1 semester - ICT Coordinator
4 years - Occupational Investigation Teacher
28 years - Experience Aerospace (U.S. Air Force)

Education:

BA University of Nebraska at Omaha (Business)
MBA Websters College (Business/Human Relations)
21 Hours beyond in Vocational Education Courses

HIGH TECHNOLOGY INTERNSHIP PROGRAM

PROGRAM MANAGER TASK LIST

PRIORITY	TASK	EVALUATION OF IMPORTANCE (high)				(low)
1	Apply human relations skills (Pursuasion, problem solving, presentation of problems, etc.	1	2	3	4	5
2	Make presentations to industries to gain support and participation.	1	2	3	4	5
3	Assist industrial representatives with the identification of training stations.	1	2	3	4	5
4	Assist industrial representatives in the development of training outlines.	1	2	3	4	5
5	Motivate students	1	2	3	4	5
6	Visit training stations	1	2	3	4	5
7	Monitor student training	1	2	3	4	5
8	Communicate orally and in writing	1	2	3	4	5
9	Counsel students, parents, and/or industrial representatives.	1	2	3	4	5
10	Interpret training supervisors evaluation of students	1	2	3	4	5
11	Communicate with trainer/supervisor concerning student progress, problems, successes, failures, strengths, weaknesses, etc.	1	2	3	4	5
12	Resolve problems (People)	1	2	3	4	5
13	Work closely with vocational counselors	1	2	3	4	5
14	Work closely with academic counselors	1	2	3	4	5
15	Take students for orientations, interviews and/or applications for training stations.	1	2	3	4	5

Appendix N-1

16	Take attendance and coordinate transportation.	1	2	3	4	5
17	Coordinate with other high tech program managers.	1	2	3	4	5
18	Screen applicants.	1	2	3	4	5
19	Recruit students.	1	2	3	4	5
20	Organize Advisory Committee	1	2	3	4	5
21	Use Advisory Committee	1	2	3	4	5
22	Select students.	1	2	3	4	5
23	Resolve problems (other than people)	1	2	3	4	5
24	Work closely with school administrators.	1	2	3	4	5
25	Make program adjustments when a valid need exists.	1	2	3	4	5
26	Conduct high tech career awareness program.	1	2	3	4	5
27	Develop curriculum.	1	2	3	4	5
28	Obtain program critiques from business, school administrators, etc.	1	2	3	4	5
29	Write reports	1	2	3	4	5
30	Consolidate and evaluate critique information	1	2	3	4	5
31	Arrange for summer program of prerequisite training.	1	2	3	4	5
32	Teach summer prerequisite materials.	1	2	3	4	5
33	Evaluate and grade students.	1	2	3	4	5
34	Present classroom instruction.	1	2	3	4	5
35	Make presentations.	1	2	3	4	5
36	Develop presentations.	1	2	3	4	5

37	Communicate with post secondary institutions.	1	2	3	4	5
38	Assign students to training stations.	1	2	3	4	5
39	Attend meetings.	1	2	3	4	5
40	Establish articulation.	1	2	3	4	5
41	Develop competency folders.	1	2	3	4	5
42	Maintain class record book.	1	2	3	4	5
43	Select instructional materials.	1	2	3	4	5
44	Maintain lesson plan book.	1	2	3	4	5
45	Select or develop public relations materials.	1	2	3	4	5
46	Organize youth leadership club (VICA)	1	2	3	4	5
47	Advise youth leadership club (VICA)	1	2	3	4	5
48	Write lesson plans.	1	2	3	4	5
49	Write minutes of meetings.	1	2	3	4	5
50	Work closely with other teachers.	1	2	3	4	5
51	Maintain student records.	1	2	3	4	5
52	Develop agendas.	1	2	3	4	5
53	Meet students returning to campus (4 to 5 pm).	1	2	3	4	5
54	Modify instructional materials.	1	2	3	4	5
55	Develop program evaluation instruments.	1	2	3	4	5
56	Post competency folders.	1	2	3	4	5
57	Develop quizes.	1	2	3	4	5
58	Develop assignment sheets.	1	2	3	4	5

59	Monitor prerequisite course.	1	2	3	4	5
60	Attend workshops.	1	2	3	4	5
61	Administer student critiques.	1	2	3	4	5
62	Take pictures.	1	2	3	4	5
63	Develop slide bank.	1	2	3	4	5
64	Type.	1	2	3	4	5

EDGEWOOD INDEPENDENT SCHOOL DISTRICT
HIGH TECHNOLOGY INTERNSHIP

SUPERVISOR EVALUATION

	Yes	in part	No
1. Was student academic preparation adequate to meet the High Technology training requirements? COMMENTS: Student needs to be exposed to basic electronics. Student needs more computer experience. A short introduction to computers may be in order. This will improve as program progresses.	13	4	4
2. Were individual student training outlines generally comprehensive and appropriate for the skill? COMMENTS: Adjustments will be made next year. We need to continually improve on training outlines. One semester was not enough time to accomplish everything. Too comprehensive for such short time period.	15	6	0
3. Did training supervisor's follow the training outlines? COMMENTS: Was not enough time to accomplish everything. Training outline needs to be more basic.	15	6	0
4. Was the level of skill achieved by each student considered to be worthy of the time and expense? COMMENTS: This student exceeded our expectations. Definitely. Those with the most self initiative get the most out of the program.	21	0	0
5. Were any training alternatives available wherein the student might achieve the same skill? COMMENTS: Possibly post secondary, but not in high school. Not in Bio-Medical Maintenance area.	0	9	12
6. Were students generally satisfied with the training received? COMMENTS: Students need to accept all activities of the job-- not just the glamorous.	18	3	0
7. Did students remain at the training site selected.	21	0	0

Appendix O

	Yes	in part	No
8. Were training locations well suited for high technolgy training? COMMENTS: Training station needs to be transferred to the operations area. We are currently changing from batch processing to an online system that will be more suited for the program.	18	3	0
9. Were training supervisors capable of providing the training outlined? COMMENTS: Supervisors had to do their own work as well as train. Student was sent to other areas for some training -- I followed her progress.	19	2	0
10. Were complaints/problems resolved equitable without delay?	21	0	0
11. Were training supervisors generally satisfied with the quality of students assigned? COMMENTS: Need self-motivated students able to function with minimum of direct supervision. Students need basic electronics understanding for Bio-Medical.	18	3	0
12. Did the school coordinator maintain good relations with the training supervisor? COMMENTS: Not too much contact could have been due to the short one semester of internship.	19	2	0
13. Did the school coordinator visit the training locations frequently? COMMENTS: Could have been due to the short one semester of internship.	19	2	0
14. Were program goals achieved? COMMENTS: One semester is too short a time. Our section was not equipped for training in all areas -- needs to be transferred to operations. Not to my satisfaction -- next year will be much better.	16	5	0
15. Were program objectives achieved?	17	4	0
16. Were facilities adequate?	20	1	0

Appendix O Cont'd

	Yes	in part	No
17. Were training materials adequate? COMMENTS: We just weren't set up for this level training, but this will improve. We had more training materials than the student could handle in such short time period.	18	3	0
18. Was transportation adequate? COMMENTS: Transportation pick-up of students was occasionally late.	20	1	0
19. Was supervision adequate?	19	2	0
20. Was coordination with industry adequate?	19	2	0
21. Was time allowed for on-the-job training adequate? COMMENTS: In teaching or training there is always more you would like to cover. One semester is too short a time. One semester is not enough. A full semester would allow more time for training and hands-on actively.	17	4	0

Appendix O Cont'd

COMPETENCY PROFILE

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Instructional Program (Occupational Objective) _____ School: _____ Date _____

Name: _____ (Last, First, Middle) Social Security No _____ Phone _____

Address: _____ Age: _____ Date of Birth _____ Sex _____

Racial/Ethnic Designation _____ Special Needs: _____

In Case of Emergency, Contact _____ Address _____ Home phone _____ Business phone _____

OR

Contact _____ Address _____ Home phone _____ Business phone _____

CAREER OBJECTIVE: _____ TRAINING LOCATION: _____

Method of Instruction	Grade	Enrollment Date	Withdrawal Date	Completion Date	Total Class Hours	Total Laboratory Hours	Total On-the-job Training Hours	Instructor

PREREQUISITE TRAINING COMPLETED: Basic Electronics YES ___ NO ___ Computer Leteracy YES ___ NO ___ Other: _____

ON-THE-JOB TRAINING/WORK EXPERIENCE

Duration of Employment	Job Title	Supervisor's Name	Training Station	Address of Employer	Phone

FOLLOW-UP RECORD

Date	Current Address	Ed Status	Educational Institution	Educational Objective
		( ) Attending ( ) Not Attending		

Not in Labor Force	Un-employed	Military Status	Employed	Employer	Address	Supervisor	Position	Related to Training	Salary
	106							( ) Yes ( ) No	

ESSENTIAL ELEMENTS FOR ALL VOCATIONAL PROGRAMS

DIRECTIONS: Evaluate the trainee, using the rating scale below. Check the appropriate number to indicate the degree of competency. The rating for each of the tasks should reflect job readiness rather than the grade given in the class.

RATING SCALE:
4 Skilled -- can work independently with no supervision
3 Moderately skilled -- can perform job completely with limited supervision
2 Limited skill -- requires instruction and close supervision
1 No Exposure -- no experience or knowledge in this area

4	3	2	1	
				Identifies characteristics and responsibilities of leaders
				Demonstrates characteristics and responsibilities of group members
				Participates in meetings according to rules of parliamentary procedures
				Functions effectively on committees by accepting assigned responsibilities
				Plans and conducts effective group leadership activities
				Participates in society in a democratic way

4	3	2	1	
				Evaluates career options and employment opportunities
				Demonstrates ability to complete job application, Interview and follow-up
				Follows written and oral instructions to complete job task
				Demonstrates punctually and dependability
				Follows rules, standards, and policies of the work place
				Demonstrates the ability to work cooperatively with others

4	3	2	1	
				Demonstrates responsibility in completing job tasks
				Exhibits work habits and attitudes that increase productivity
				Recognizes opportunities and options for business ownership
				Identifies entry level processes needed to open a business
				Utilizes terms associated with small business
				Recognizes the role of small business in the free enter prise system

HIGH TECHNOLOGY INTERNSHIP PROGRAM

COMPETENCIES:

DIRECTIONS: Evaluate the adequacy of the exposure, understanding, response or task performance. The rating for each item should reflect development of knowledge, awareness, and performance rather than the grade earned in class.

RATING SCALE:

4-Complete exposure-understands concepts and/or can perform tasks without supervision.

3-Moderately exposed-general understanding and/or can perform tasks with limited supervision.

2-Some exposure-limited understanding-needs additional information or knowledge to understand and/or perform the task.

1-No Exposure-no experience or knowledge in this area.

ORIENTATION

4	3	2	1	
				Work Center Layout.
				Facilities involved.
				Attendance policy.
				Dress and grooming standards.
				Standards of conduct.
				Evaluation methods.

SAFETY & SECURITY

4	3	2	1	
				Understands company security practices.
				Fire prevention and evacuation procedures.
				Safety regulations and procedures.

WORK CENTER PROCEDURES

4	3	2	1	
				Understands objectives of the work center.
				Understands relationship of high tech position within the work center.
				Identifies responsibilities of postions within the work center.
				Understands work center relationships with other functions of the industry.

INFORMATION AND CONCEPTS

4	3	2	1	
				Awareness of high tech information, hardware and software.
				Understands capabilities of the work center high tech equipment.
				Understands application of these capabilities to the functions of the work center.
				Exposed to the theory and concepts of the technology applied in the field.
				Observes the operation and application of high tech equipment to the functions of the work center.

PROFESSIONAL ASPECTS

4	3	2	1	
				Observes interpersonal relationships of professionals in industry.
				Observes work center and interdepartmental meeting.
				Aware of professional responsibilities of the technician.
				Exposure and understanding of the high tech terminology.

COMPETENCIES--Continued.

TECHNICAL PROCEDURES

4	3	2	1	
				Understands the operation of High Tech systems of the work center.
				Understands set up of equipment.
				Understands basic operation of the system.
				Understands operation of support or related equipment.
				Understands use of products or information produced by the system.
				Aware of high tech application to work center problem solving.
				Completed study assignments of technical information and data.

TECHNICAL APPLICATIONS

4	3	2	1	
				Completed trail and error phase of systems operation.
				Performs set-up of system and/or project.
				Operates high tech equipment.
				Applies high tech concepts and theories to work projects.
				Operates support equipment and/or obtains support information needed to accomplish work projects.

CAREER AWARENESS

4	3	2	1	
				Investigates the socio-economic characteristics of the high tech occupation to establish relevancy to personal goals.
				Investigates the post-secondary educational opportunities of the high tech occupation.
				Reviews personal aptitudes, interests, emotional and physical needs to determine suitability of the high tech occupation.

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ESSENTIAL ELEMENTS FOR ALL VOCATIONAL PROGRAMS

DIRECTIONS: Evaluate the trainee, using the rating scale below. Check the appropriate number to indicate the degree of competency. The rating for each of the tasks should reflect job readiness rather than the grade given in the class.

RATING SCALE: 4 Skilled – can work independently with no supervision
3 Moderately skilled – can perform job completely with limited supervision
2 Limited skill – requires instruction and close supervision
1 No exposure – no experience or knowledge in this area

4	3	2	1	
				Identifies characteristics and responsibilities of leaders
				Demonstrates characteristics and responsibilities of group members
				Participates in meetings according to rules of parliamentary procedures
				Functions effectively on committees by accepting assigned responsibilities
				Plans and conducts effective group leadership activities
				Participates in society in a democratic way

4	3	2	1	
				Evaluates career options and employment opportunities
				Demonstrates ability to complete job application, interview and follow-up
				Follows written and oral instructions to complete job task
				Demonstrates punctuality and dependability
				Follows rules, standards, and policies of the work place
				Demonstrates the ability to work cooperatively with others

4	3	2	1	
				Demonstrates responsibility in completing job tasks
				Exhibits work habits and attitudes that increase productivity
				Recognizes opportunities and options for business ownership
				Identifies entry level procedures and planning processes needed to open a business
				Utilizes terms associated with small business
				Recognizes the role of small business in the free enterprise system

HIGH TECHNOLOGY INTERNSHIP PROGRAM

ADMINISTRATOR EVALUATION

		Yes	in part	No
1.	Was student academic preparation adequate to meet the high technology training requirements? COMMENTS: Students without previous courses need a basic understanding of electronics and/or computer literacy.		3	
2.	Were student selection procedures adequate? COMMENTS: More counseling needed to be sure of students interest, motivation, and future intentions.	2	1	
3.	Were individual student training outlines generally comprehensive and appropriate for the skill?	3		
4.	Did training supervisors follow the training outlines? COMMENTS: Some felt one semester of training was too short.	3		
5.	Was the level of skill achieved by each student considered to be worthy of the time and expense?	3		
6.	Were there any training alternatives available wherein the student might achieve the same skills? COMMENTS: Limited to certain areas.		1	2
7.	Were students generally satisfied with the training received? COMMENTS: Yes, for the most part. One junior student desires to change to computer accounting next year.	3		
8.	Did students remain at the training site selected? COMMENTS: All except one student who was removed from the program.	2	1	
9.	Were students counseled at program conclusion concerning high technology opportunities?	3		

Appendix Q

		Yes	in part	No
10.	Were training locations well suited for high technology training?	3		
11.	Were training supervisors capable of providing the training outline?	3		
12.	Were complaints/problems resolved equitably and without delay?	3		
13.	Were training supervisors generally satisfied with the quality of students assigned? COMMENTS: For the most part they were, actually no one was dissatisfied.	3		
14.	Did the school coordinator maintain good relations with training supervisors?	3		
15.	Did the school coordinator visit the training locations frequently?	3		
16.	Were industry comments favorable at program conclusion? COMMENTS: With recommendations for improvement. Some addressed transportation problems and how they feel they can improve their program.	3		
17	Were program goals achieved?	3		
18	Were program objectives achieved?	3		
19	Were facilites adequate?	3		
20	Were training materials adequate?	3		
21	Was the curriculum relevant?	3		
22	Was transportation adequate? COMMENTS: Some minor problems. On occasion transportation was not timely.		3	
23	Was supervision adequate?	3		
24	Was coordination with industry adequate?	3		
25	Was funding adequate?	3		
26	Was time allowed for on-the job training adequate? COMMENTS: One-half school year	2		1

Appendix Q Cont'd

	Yes	in part	No
is not adequate -- needs to be a full year program.			
27. Was time allowed for related training adequate?		3	

Appendix Q Cont'd